

optical means for guiding the plurality of independently modulated beams of light emitted from said light source means to a deflecting surface of said deflecting element; and

an optical element for causing the plurality of independently modulated beams of light deflected by said deflecting element to be imaged into a spot-like shape on a surface to be scanned, said optical element comprising a single lens, the curvatures of opposite lens surfaces of the single lens in the sub-scanning direction being continuously varied from the on-axis toward the off-axis in the effective portion of the lens.

45. A scanning optical apparatus according to Claim 44, wherein when the maximum value and minimum value of an F number of the beam of light incident on the surface to be scanned in the sub-scanning direction are  $F_{\max}$  and  $F_{\min}$ , respectively, the curvatures of the opposite lens surfaces of the single lens in the sub-scanning direction are continuously varied from the on-axis toward the off-axis so as to satisfy the condition that  $F_{\min}/F_{\max} \geq 0.9$ .

46. A scanning optical apparatus according to Claim 44, wherein the sign of the curvature of at least one of the opposite lens surfaces of the single lens in the sub-scanning direction is reversed from the on-axis toward the off-axis.

47. A scanning optical apparatus according to Claim 44, wherein the curvatures of the opposite lens surfaces of the single lens in the sub-scanning direction are varied asymmetrically with respect to the optical axis from the on-axis toward the off-axis.

48. A scanning optical apparatus according to Claim 44, wherein said optical element is made by plastic molding.

49. A scanning optical apparatus according to Claim 44, wherein said optical element is made by glass molding.

50. A scanning optical apparatus according to Claim 44, wherein the single lens has a lens surface comprising an aspherical surface in the main scanning direction.

51. A scanning optical apparatus according to Claim 44, wherein the single lens has a lens surface having an inflection point in the main scanning direction.

52. A scanning optical apparatus comprising:  
light source means having a plurality of light source units capable of being independently modulated;  
a deflecting element for deflecting a plurality of independently modulated beams of light emitted from said light source means;  
optical means for guiding the plurality of independently modulated beams of light emitted from said light source means to a deflecting surface of said deflecting element; and  
an optical element for causing the plurality of independently modulated beams of light deflected by said deflecting element to be imaged into a spot-like shape on a surface to be scanned, said optical element being comprised of at least two lenses, the curvatures of at least two lens surfaces of the two lenses in the sub-scanning direction being continuously varied from the on-axis toward the off-axis in the effective portion of the lens.

53. A scanning optical apparatus according to Claim 52, wherein when the maximum value and minimum value of an F number of the beam of light incident on the surface to

be scanned in the sub-scanning direction are  $F_{\max}$  and  $F_{\min}$ , respectively, the curvatures of the at least two lens surfaces of the two lenses constituting said optical element in the sub-scanning direction are continuously varied from the on-axis toward the off-axis so as to satisfy the condition that  $F_{\min}/F_{\max} \geq 0.9$ .

54. A scanning optical apparatus according to Claim 52, wherein the sign of the curvature of the at least one lens surface of the two lenses in the sub-scanning direction is reversed from the on-axis toward the off-axis.

55. A scanning optical apparatus according to Claim 52, wherein the curvatures of the at least two lens surfaces of the two lenses in the sub-scanning direction are varied asymmetrically with respect to the optical axis from the on-axis toward the off-axis.

56. A scanning optical apparatus according to Claim 52, wherein at least one of the two lenses constituting said optical element is made by plastic molding.

57. A scanning optical apparatus according to Claim 52, wherein at least one of the two lenses constituting said optical element is made by glass molding.

58. A scanning optical apparatus according to Claim 52, wherein the at least two lens surfaces of the at least two lenses have aspherical surfaces in the main scanning direction.

59. A scanning optical apparatus comprising:  
light source means having a plurality of light source units capable of being independently modulated;  
a deflecting element for deflecting a plurality of independently modulated beams of light emitted from said light source means;  
optical means for guiding the plurality of independently modulated beams of light emitted from said light source means to a deflecting surface of said deflecting element; and  
an optical element for guiding the plurality of independently modulated beams of light deflected by said deflecting element to be imaged into a spot-like shape on a surface to be scanned, said optical element being comprised of a plurality of lens surfaces, the curvatures of at least two lens surfaces of the plurality of lens surfaces in the sub-scanning direction being continuously varied from the on-axis toward the off-axis in the effective portion of the lens.